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(Strep Throat)

Streptococcal Pharyngitis

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Symptoms

Individuals with sore throats caused by group A streptococcal infections often experience an abrupt onset of illness and frequently exhibit a fever of 101° F or higher, chills, headache, an acutely sore throat with pain on swallowing, and malaise. Nausea, vomiting and abdominal pain are common in children. The throat shows inflammation, with redness and swelling; tonsils may be enlarged and may be covered with a grayish-white exudate; and the lymph nodes in the neck (anterior cervical nodes) may be enlarged and tender. A runny nose and/or middle ear infection may also result. The presence of a rash is unusual but may appear with strep throat. Excoriated nares (scraped or irritated membranes of the nose), tender (not just enlarged) cervical lymph nodes and history of contact with another proven case of streptococcal infection are highly suggestive of illness due to group A streptococcal infection.

Symptoms of cough, hoarseness or conjunctivitis makes a streptococcal diagnosis unlikely.

Not all patients will have all of the symptoms described above, and the severity of symptoms will vary.

NOTE: Scarlet fever is not a complication of strep throat, but is the result of infection with a different strain of streptococcus which produces an erythrogenic (red rash producing) toxin to which the patient has no immunity. In addition to many of the above symptoms, patients have small, red, hemorrhagic spots in the throat, a "strawberry tongue," and a fine, red skin rash on the trunk and extremities. The rash usually develops within the first 48 hours

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of illness and fades over the course of a week. The rash is followed by flaking of the outer layer of skin.

Infectious Agent

Streptococcal sore throat is caused by group A beta hemolytic *Streptococcus pyogenes* with approximately 75 serologically distinct types. Occasionally, groups C and G streptococci have also produced pharyngitis.

Occurrence

Streptococcal sore throat is common in temperate zones, with highest incidence during late winter and spring. Individuals in populations where close contact occurs (e.g., schools, military recruits, etc.) are at increased risk of infection. Most cases occur in children between the ages of 3 and 15.

Mode of Transmission

Infection results from direct or indirect contact with droplets of saliva or nasal secretions from an individual who has active streptococcal pharyngitis, rarely by indirect contact through objects or hands. Authorities disagree on the extent carriers transmit infection. However, asymptomatic carriage of the organism is common. Antibiotic therapy for asymptomatic carriers usually is not indicated and is seldom effective. Streptococcal carriers seldom develop either rheumatic fever or acute glomerulonephritis (inflammation of the kidney).

Incubation period

The incubation period (the time from exposure to illness) is short, usually one to three days.

Diagnosis

Diagnosis of streptococcal pharyngitis is made on the basis of clinical symptoms, elevated white blood cell counts, and a *throat culture*. Because the symptoms of strep throat are clinically indistinguishable from viral pharyngitis, the isolation of *Streptococcus* species from appropriate specimens provides the only definitive means of establishing the diagnosis. Rapid antigen detection tests usually are not advised as laboratory tools for establishing the diagnosis because of inaccuracies in these test results, especially in patients harboring small numbers of streptococci.

Period of Communicability

In untreated, uncomplicated cases, an individual will be infectious for 10-21 days. In untreated cases with purulent discharges, an individual may be infectious for weeks or months. When adequate antibiotic therapy has been initiated, a child may return to school after 24 hours, providing the child has no fever and will continue the antibiotics for 10 days.

Therapy

Penicillin continues to be the drug of choice for treating all forms of group A streptococcal diseases. Persons allergic to penicillin may be treated with erythromycin. Antibiotic treatment must be given orally (for 10 days), or intramuscularly if there is any doubt the full 10-day regimen will be completed.

Complications

Acute rheumatic fever or acute glomerulonephritis (inflammation of the kidney) are two possible, serious complications of strep throat due to group A streptococci (but are not

associated with other types of streptococci), and may appear within one to five weeks of the initial infection. Antibiotic treatment of strep throat, initiated within 10 days following onset of illness, minimizes the risk of rheumatic fever and is believed also to prevent acute glomerulonephritis.

Measures Most Likely to Assist Control and Prevention

Children with strep throat must be excluded from school. They may return after 24 hours when they are afebrile (without fever) and have been placed on a 10-day regimen of an appropriate oral antibiotic, or an intramuscular antibiotic regimen. (Bed rest and isolation from other children are indicated during the early phase of the illness.)

Treatment initiated within the first 24-48 hours and continued for 10 days may reduce the severity of acute illness. The effect of treatment in preventing rheumatic fever and acute glomerulonephritis is stated in the section titled **Complications**.

There is no vaccine for the prevention of streptococcal infections. However, as with many communicable diseases, the best defense is good personal hygiene - especially hand washing. Children should be taught at an early age to always wash their hands after using the toilet and before meals. In addition to prevention of streptococcal infections, rhinoviruses (the viruses responsible for most cases of the common cold) also are transmitted by contaminated hands by carrying virus to the eyes and nose.

Children should be taught to use a tissue to cover the mouth and nose when sneezing and coughing and to dispose of tissues properly.

Children should not be allowed to share eating or drinking utensils.

Additional Control Measures

The body's basic defense against infection, the immune system, should be maintained with a healthy diet, exercise and plenty of rest.

Throat cultures should be obtained from children with symptoms typical for streptococcal infections; those diagnosed as streptococcal pharyngitis require treatment.

School culture surveys are seldom indicated. They should be considered only if high rates of culture-proven, symptomatic streptococcal pharyngitis are occurring within a school or in a classroom over a short period of time, or, if the streptococcal strain is nephritogenic (causing kidney inflammation) or associated with rheumatic fever. The Illinois Department of Public Health and local health departments are available for consultation regarding the rare need for throat culture surveys.

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